



**WILDLIFE
HABITAT
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SPECIES MANAGEMENT



Bats Project Guidance

Stakeholder Informed



Introduction

Bats are the only mammals with true flight capabilities. With 1,331 species of bats globally, bats can be found in all regions except the polar regions, extreme deserts, and the most remote islands. The majority (70%) of bat species eat insects; other species have food sources such as fruit, nectar, small mammals and fish.

Bats are an essential part of many ecosystems, benefitting both humans and natural environments through ecosystem services such as pest control, pollination and seed dispersal.

Bats are threatened by habitat loss, fragmentation and degradation, as well as climate change, diminished food supply, harassment and hunting. In addition, bat colonies are susceptible to disease including white-nose syndrome, a rapidly-spreading disease impacting colonies in North America with high rates of lethality.

Building Your Program

Projects are divided into four categories: **Habitat**, **Species Management**, **Education and Awareness** and **Other Options**. You can build a program with more than one of each category but you must associate your program with at least one habitat. This Bat Project Guidance is in the **Species Management** category. You must associate your bat project with your habitat; the most common association is with wetlands, forests, or caves/subterranean habitat.



Habitat – Projects that focus on conservation actions to protect, restore and manage different habitats.



Species Management – Projects addressing the conservation needs of targeted wildlife species or groups of species.



Education and Awareness – Projects to improve awareness, understanding and skills relating to conservation and the environment.



Other Options – Specialized projects that add value to your conservation efforts.

Browse the Project Guidance library at wildlifehc.org/pg.

What Do Bat Projects Look Like?

Bats projects create or enhance habitat for bats and/or use existing bat habitat as a focus for conservation education.

All bat projects should be designed within a conservation context of what is locally appropriate and suitable for the site. Bat habitat should include the following features either on-site or in a nearby off-site area within the species' range:

- **Food sources**, which are supported by established habitats such as wetlands, forests or patches of trees, grasslands and meadows. Example project components may include planting fruit-bearing trees for fruit-eating bats or enhancing wetlands that support insect prey for insect-eating bats.
- **Roost sites**, including hibernacula, which can be provided by large trees, cliffs, caves, active or retired mines, buildings or bridges, and artificial structures such as bat houses. Example project components may include protecting and restoring

woodland roost sites by planting trees or protecting old stands of suitable roost trees, preventing human disturbance and destruction of hibernacula by installing bat gates and stabilizing mine shafts that offer bat habitat, and installing structures like bat houses to provide roost sites where no other sites are available.

- **A source of open water**, either natural and manmade. Example project components might include creation or enhancement of wetlands with expanses of open water, or installation of appropriately-sized water sources in arid areas.

Considerations for Corporate Lands

Projects implemented on corporate-owned lands have different circumstances and challenges to those on public lands, protected lands or wild lands.

Which types of corporate lands are best suited for bat projects?

Bat projects are suitable for most types of corporate lands, whether urban, suburban or rural. They are especially useful on lands that are connected through natural corridors such as those that contain forests or large trees, have food and water sources, or have roosting features.

WHC does not support creating bat habitat in areas where chemical applications or other site operations may harm bats.

Bat education efforts are also suitable to properties of all types, sizes and locations, and may be easily tailored to fit the habitat and species complement of the site and surrounding landscape.

Addressing challenges

The corporate context presents certain challenges for implementing bat projects. Understanding these concerns and potential ways to overcome them can help your bat project succeed in the long term.

Concern	Response
In buildings and other structures that see human activity, bat colonies may not be welcome.	<i>Teams can work to exclude bats from structures where they may not be welcome while providing alternative roosting or hibernation habitat elsewhere.</i>
Employees or other stakeholders may have a fear of bats.	<i>The team can engage in education to dispel myths and increase awareness about the importance of bat conservation.</i>
Employees may not have the knowledge to determine the appropriateness of a bat project.	<i>Teams can connect with the local bat network or other bat expert to ensure the project is relevant for the local ecosystem and appropriate for the targeted bat species.</i> <i>Only licensed rehabilitators and biologists should handle bats.</i>

Concern	Response
<p>The estimated cost of bat projects might be prohibitive to some facilities.</p>	<p><i>The team could partner with the local bat network or other relevant organization to explore bat conservation opportunities within budgetary and logistical boundaries.</i></p> <p><i>Programs may be able to share costs and use of expensive supplies with other nearby programs or partners.</i></p>
<p>Short-term planning might lead to projects that do not benefit bat conservation.</p>	<p><i>A partnership with the local bat network or other relevant organizations will help the team build a long-term plan and obtain potential assistance with the project's management.</i></p>
<p>There may be safety concerns about certain caves or mines used by bats for roosting or hibernation.</p>	<p><i>Installing a bat gate can prevent unauthorized access to the cave or mine, while still allowing bats to enter and exit the habitat feature.</i></p>

Getting Started with Bat Projects

For a project to qualify toward Conservation Certification, you must be able to answer “yes” to five questions.

1. Is the project locally appropriate?
2. Does it have a stated conservation or education objective?
3. Does it provide value or benefit to the natural community?
4. Have outcomes been measured and is there supporting documentation?
5. Does it exceed any pertinent regulatory requirements?

Conservation and education objectives

It is a requirement of Conservation Certification that bat projects be designed to meet one or more conservation objectives. Objectives can guide the direction of the project, help motivate others to participate and provide a basis for evaluation.

The following are suggested objectives for bat projects. Your team may choose one or more of these

objectives, or develop your own relevant objectives.

- Preserving, creating, enhancing or restoring bat habitat:
 - for bats in general
 - for a specific bat species
 - across one or multiple seasons
 - on a large or landscape scale
 - along migratory corridors or across international borders
- Protecting and monitoring bat colonies that are using human structures as roosts or hibernacula
- Reducing or preventing transmission of white-nose syndrome and other bat diseases
- Managing, preserving or protecting existing bat habitat to decrease a conservation threat, loss or disturbance
- Addressing one or more scientific and research question related to bats
- Using bat habitats and species to facilitate conservation education
- Contributing to a citizen science project focused on bats

The following strategies are recommended to strengthen the conservation impact of your project:

- Be designed to support or enhance the complete life cycle needs of relevant bat species, at the landscape or migratory range level
- Connect goals and objectives to those of a larger local, regional and landscape-scale initiatives for bat conservation
- Participate in a regional or landscape-scale monitoring program
- Establish a baseline of bat species in the habitat, upon which desired outcomes can be based and evaluated
- Be carried out in partnership with a bat conservation-focused organization that furthers the stated conservation objectives of the project
- Include artificial or manufactured structures such as bat houses or bat gates that meet a conservation or education outcome
- Provide live animal demonstrations or live webcams of bat roosts to increase understanding of bats and promote their conservation needs
- Incorporate bat habitat into existing operational BMPs including agricultural, mine management, forestry, management of large trees, and right-of-way maintenance
- Engage in best management practices that benefit bats and their food sources, such as reducing pesticide use near bat habitats, including water and food sources
- Engage in site-wide or company-wide operational and behavioral changes to positively impact bat conservation
- Coordinate with local agencies or landowners to provide alternative roosting/hibernacula habitat when bats must be excluded from known roosts/hibernacula such as mine openings, bridges, buildings, tall trees, etc.
- Provide employees or community members with learning opportunities about bats and their habitat needs, their functions in the ecosystem, and importance to the local community
- Communicate or demonstrate the purpose and outcomes of the bat project to the community
- Be implemented as part of a corporate-wide initiative for bat conservation

- Be in place for at least five years, with a documented commitment of at least five more years
- Integrate bat habitat as a part of another ecosystem enhancement project such as the creation of wetland or forested buffers, or the installation of rain gardens or pollinator habitats
- Connect to other bat projects within bat species' ranges, along migratory pathways, or across international borders
- Provide opportunities for credible, scientifically-rigorous research by college students, professors and other scientific professionals
- Utilize technical advice from local experts in bat conservation
- Manage bat habitat to benefit the conservation and recovery of specific rare or protected bat species in partnership with an appropriate government agency or academic institution

Partnerships

Bat projects implemented on corporate lands can benefit from partnerships with groups that have established bat conservation or education objectives, such as a regional bat working group or wildlife agency. A team can work with partners for help with the design, implementation or monitoring of its bat project. Many partners may also be able to provide educational opportunities for employees and community members, such as live animal demonstrations of bat species by local wildlife rehabilitators or nature centers and training in identification and monitoring of bats by a local bat expert. Partners may also be able to assist the team with obtaining funding for the project, and identify learning links to other conservation priorities in the region.

Resources

Your project may benefit from online or printed resources available for your region to support the design, delivery, maintenance and monitoring of bat projects.

A search for “bats” in the Conservation Registry returns over 150 projects implemented through WHC’s certification program. This is a great place to find inspiration for your project and see what others are doing in and around your location.

The following terms, in any combination, may be useful when searching online for items related to this theme:

bat	white-nose syndrome
flying fox	echolocation
microbats	bat working group
megabats	acoustic monitoring
migratory bats	mist netting
food sources for bats	thermal imaging
bats in [location]	artificial roosts
bat conservation	bat hibernacula
bat house	bat roosts
bat box	bat organizations
bat gate	bat caves
mine closure	

Understanding the Application Process

Documentation

When applying for Conservation Certification, you will provide documentation of the planning, implementation, maintenance and monitoring of your bat project. The following is required documentation for bat projects; however, you may also submit additional supporting materials.

Map/image of the project area, showing the relative size and approximate location of the project (other relevant information can be shown in the map as well, but is not required).

Photographs and videos that depict the progress of the project implementation and management.

Maintenance plans that demonstrate appropriate activities that meet the needs of the habitat to fully support the target species and support the conservation and education objectives.

Baseline data that provides a biological baseline upon which post-implementation monitoring can be based and used to evaluate the progress of the project and determine next steps.

For bat projects, baseline data should be gathered on bat populations or bat habitats on the property. It can be as simple as an inventory of bat colony locations or a log indicating when and where employees observed bats on-site. WHC Conservation Certification values higher-quality baselines, which incorporate detailed information such as the estimated size of each bat colony, which bat species occur, and signs of disease.

Monitoring logs that show the frequency, type, and results of monitoring of the project, whether in an informal manner or a scientifically rigorous manner.

Examples of routine monitoring efforts that could be documented for a bat project include, but are not limited to:

- Monitoring of bat use of roosts/hibernacula – presence/absence, exit counts, signs of damage/repair needs, etc.
- Surveys to estimate numbers or identify bat species – mist-netting, acoustic monitoring, thermal cameras, driving transects, etc.
- Tracking migration or seasonal changes in bat populations
- Voluntary monitoring for bat fatalities resulting from operations, white-nose syndrome, etc.

Examples of technical advice utilized in the project, such as bat conservation organizations, bat networks, consultants, guidebooks, websites, journal articles, etc.

Application questions

As you complete the application online, you will be asked the following questions about your bat project. These questions will help us understand and evaluate your project.

	Question	Why this question is important
Objective	What are the project's conservation objectives?	<i>Having a conservation objective is a requirement for certification.</i>
Overview	Does the project target a specific species or a group of species?	<i>This provides us with a description of your project to allow us to assess it.</i>
	Name the group of species being targeted and list several of the species in this group (common or scientific names).	
	Name the species being targeted (both common and scientific names).	
	What specific features have been added or maintained to benefit the species?	
	Briefly describe activities taking place to address the targeted species?	
	Upload photos showing the bat project.	
	When did on the ground work for the project begin?	

	Question	Why this question is important
Habitat or life cycle needs	Which of the major habitat and/or life cycle needs does your project address for the targeted species?	<i>Certain conservation actions are very valuable to the target species.</i>
	Describe any essential habitat components for bats that are not provided through your project but available in the nearby landscape	
	Upload documentation (e.g. map of bat habitat component locations nearby)	
	What specific features have been added or maintained to benefit the species? Roosts, hibernacula, water sources, food sources	
	Have you added these features since your last certification application?	
	How did specific design or placement considerations maximize the benefit of these new features?	
	Upload documentation of the specific considerations.	
	Were the new features installed to provide alternative habitat components due to the impact of operations?	

	Question	Why this question is important
Species Management	Briefly describe activities taking place to address the targeted species?	<i>Appropriate management policies and practices are also important to the target species.</i>
	Which habitat components are you maintaining or managing? Roosts, hibernacula, water sources and food sources	
	Describe how you are maintaining or managing for each habitat component.	
	Provide a timeline of the completed activities such as implementation, maintenance, population management, etc.	
	What other bat-specific management activities are taking place have not yet been described?	
	Upload documentation of these activities.	
	Have any regionally specific threats to bats been identified in the area (e.g. white nose syndrome)?	
	Describe the threat and any actions you are taking to address it.	
Monitoring	Was baseline data collected for this project?	<i>Monitoring is essential to understand the impact of the project and to be able to adapt the project develops.</i>
	Explain the types of baseline data collected?	
	Upload the baseline data.	

	Question	Why this question is important
Monitoring <i>Continued</i>	Is there active monitoring of the project?	<i>Monitoring is essential to understand the impact of the project and to be able to adapt the project develops.</i>
	List each type of monitoring, including the frequency and list any plans or protocols used.	
	Upload the monitoring protocols, if applicable.	
	Upload the monitoring data and any analysis, if applicable.	
	Provide a brief summary of results from monitoring.	
	List any external organizations the monitoring data is submitted to.	
	Evaluate the success of the project. If there were any concerns, what are the plans to address them in the future?	
Employee Participation	Do employees actively contribute to the bat project?	<i>Employee participation can strengthen a project and secure its future.</i>
	How many employees actively contribute to the project on a regular basis?	
	Describe how employees are involved in this project.	
	How many employee hours were spent on the following activities each year?	

	Question	Why this question is important
Other Participants	Do any groups or individuals outside of your company actively contribute to the project on a regular basis?	<i>It is not always possible to recruit outside groups to a project. Conservation and education partners can strengthen a project and provide different audiences to use it for lessons or recreation, thus broadening its reach.</i>
	Select the types of groups.	
	List the names of the groups you work with.	
	Describe their involvement in this project.	
	How many hours were spent by the groups on the following activities each year?	
	If you work with a bat specialist and have a current letter of support from them, upload it.	
	List additional sources of technical advice (e.g. website, guidebook, etc.) and describe how they were used.	
Regulatory Requirements	Are any aspects of the project done in relation to regulatory requirements?	<i>Going beyond compliance is a requirement for certification.</i>
	Explain how the project exceeds requirements.	
Connectivity	Does the project connect with other bat projects on neighboring land?	<i>Connectivity onsite and across fence lines helps to decrease fragmentation, one of the leading causes of habitat loss.</i>
	Describe how the project connects with the other bat projects.	

	Question	Why this question is important
Alignments	Does the project align with any larger scale initiatives? (e.g. corporate strategy, regional conservation plan, migratory pathway, watershed plan, etc.)	<i>Aligning conservation efforts with large-scale conservation plans and other regional conservation initiatives allows a site-based activity to support a landscape-scale objective.</i>
	Is the project part of a corporate level commitment to bat conservation?	
	Upload documentation of your corporate commitment bat conservation.	
	Does the project align with an existing conservation plan or other large-scale initiative?	
	List the conservation plans or other large-scale initiatives the project aligns with and provide website links, if available.	
	How does your project align with these large-scale initiatives?	
Existing Certifications	Does this project have third party bat certification?	<i>Other certifications or recognitions illustrate strong efforts and commitments.</i>
	List the certifications and provide a website link if available.	

Content development for Conservation Certification

To inform the development of Conservation Certification, WHC analyzed the projects it was recognizing through its certification program to assess whether they were aligned with contemporary conservation and education priorities.

Following this assessment and using information from it, WHC convened Advisory Committees around conservation and education themes to develop the content that would guide practitioners and applicants in the future. This content is the basis for the Project Guidance and the online application process.

The following provided feedback on the initial draft of the Bat Project Guidance:

Tim Carter, Ball State University

Dennis Krusac, U.S. Forest Service, U.S. Department of Agriculture

Angie McIntire, Arizona Game & Fish Department; Western Bat Working Group

Rob Mies, Organization for Bat Conservation

Darren Miller, Weyerhaeuser Company

Kirk Navo, Head First Biological, LLC; Colorado Bat Working Group

Holly Ober, University of Florida

Marikay Ramsey, Bureau of Land Management, U.S. Department of the Interior

Mike Rauschkolb, Red Mountain Minerals, LLC

Jerry Roppe, Iberdrola Renewables, LLC

Dave Waldien, Bat Conservation International

More information can be found about this process in the “Our Impact” section of wildlifehc.org under “Commitment to Transparency.”



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The WHC Strategy and Planning team can help you build a successful project by identifying needs, making connections with partners and resources, and providing strategies that meet business and conservation goals. Contact us today.

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Every act of conservation matters.

